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Sequence Listing could not be accepted due to errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866)  
217-9197 (toll free).

Reviewer: Durreshwar Anjum

Timestamp: Tue Sep 25 12:12:43 EDT 2007

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\*\*\*\*\*

Reviewer Comments:

? ?

Delete the Non Ascii characters appears above the headings.

? ? ? ?C# hC# h \* + O s ? ? ? ? N P ? ?

/

0

>

?

Please delete the end of file text which appears below seq id 656

And save the file in ASCII txt mode

delete the extra heading inserted in the sequence listing which appears  
one below the other.

\*\*\*\*\*

Application No: 10576331 Version No: 1.0

**Input Set:**

**Output Set:**

**Started:** 2007-09-12 13:26:32.596  
**Finished:** 2007-09-12 13:27:06.289  
**Elapsed:** 0 hr(s) 0 min(s) 33 sec(s) 693 ms  
**Total Warnings:** 2355  
**Total Errors:** 342  
**No. of SeqIDs Defined:** 656  
**Actual SeqID Count:** 656

Error code	Error Description
W 402	Undefined organism found in <213> in SEQ ID (1)
W 402	Undefined organism found in <213> in SEQ ID (2)
W 402	Undefined organism found in <213> in SEQ ID (3)
W 402	Undefined organism found in <213> in SEQ ID (4)
W 402	Undefined organism found in <213> in SEQ ID (5)
W 402	Undefined organism found in <213> in SEQ ID (6)
W 402	Undefined organism found in <213> in SEQ ID (7)
W 402	Undefined organism found in <213> in SEQ ID (8)
W 402	Undefined organism found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 402	Undefined organism found in <213> in SEQ ID (12)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (12)
W 402	Undefined organism found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 402	Undefined organism found in <213> in SEQ ID (18)

Input Set:

Output Set:

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Error code	Error Description
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (34)
W 402	Undefined organism found in <213> in SEQ ID (37)
W 402	Undefined organism found in <213> in SEQ ID (38)
W 402	Undefined organism found in <213> in SEQ ID (40)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (40)
W 213	Artificial or Unknown found in <213> in SEQ ID (45)
W 213	Artificial or Unknown found in <213> in SEQ ID (46)
W 213	Artificial or Unknown found in <213> in SEQ ID (47)
W 213	Artificial or Unknown found in <213> in SEQ ID (48)
W 213	Artificial or Unknown found in <213> in SEQ ID (49)
W 213	Artificial or Unknown found in <213> in SEQ ID (50)
W 213	Artificial or Unknown found in <213> in SEQ ID (51)
W 213	Artificial or Unknown found in <213> in SEQ ID (52)
W 402	Undefined organism found in <213> in SEQ ID (61)
W 402	Undefined organism found in <213> in SEQ ID (62)
E 355	Empty lines found between the amino acid numbering and the
E 321	No. of Bases conflict, this line has no nucleotides SEQID (62)
W 402	Undefined organism found in <213> in SEQ ID (65)
W 402	Undefined organism found in <213> in SEQ ID (66)
W 402	Undefined organism found in <213> in SEQ ID (69) This error has occurred more than 20 times, will not be displayed

**Input Set:**

**Output Set:**

**Started:** 2007-09-12 13:26:32.596  
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Error code	Error Description		
W 213	Artificial or Unknown found in <213>	in SEQ ID (79)	
W 213	Artificial or Unknown found in <213>	in SEQ ID (80)	
W 213	Artificial or Unknown found in <213>	in SEQ ID (81)	
W 213	Artificial or Unknown found in <213>	in SEQ ID (82)	
W 213	Artificial or Unknown found in <213>	in SEQ ID (83)	
W 213	Artificial or Unknown found in <213>	in SEQ ID (84)	This error has occured more than 20 times, will not be displayed
E 341	'Xaa' position not defined	SEQID (125)	POS (170)
E 341	'Xaa' position not defined	SEQID (125)	POS (171)
E 341	'Xaa' position not defined	SEQID (125)	POS (172)
E 341	'Xaa' position not defined	SEQID (125)	POS (173)
E 341	'Xaa' position not defined	SEQID (125)	POS (174)
E 341	'Xaa' position not defined	SEQID (125)	POS (175)
E 341	'Xaa' position not defined	SEQID (125)	POS (176)
E 341	'Xaa' position not defined	SEQID (125)	POS (177)
E 341	'Xaa' position not defined	SEQID (125)	POS (178)
E 341	'Xaa' position not defined	SEQID (125)	POS (179)
E 341	'Xaa' position not defined	SEQID (125)	POS (180)
E 341	'Xaa' position not defined	SEQID (125)	POS (181)
E 341	'Xaa' position not defined	SEQID (125)	POS (182)
E 341	'Xaa' position not defined	SEQID (125)	POS (183)
E 341	'Xaa' position not defined	SEQID (125)	POS (184)
E 341	'Xaa' position not defined	SEQID (125)	POS (185)

Input Set:

Output Set:

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Actual SeqID Count: 656

Error code	Error Description
E 341	'Xaa' position not defined SEQID (125) POS (186)
E 341	'Xaa' position not defined SEQID (125) POS (187)
E 341	'Xaa' position not defined SEQID (125) POS (188)
E 341	'Xaa' position not defined SEQID (125) POS (189) This error has occurred more than 20 times, will not be displayed
W 112	Upper case found in data; Found at position(977) SEQID(656)
W 112	Upper case found in data; Found at position(1528) SEQID(656)
W 112	Upper case found in data; Found at position(1930) SEQID(656)
W 112	Upper case found in data; Found at position(1950) SEQID(656)
W 112	Upper case found in data; Found at position(2002) SEQID(656)
W 112	Upper case found in data; Found at position(2030) SEQID(656)
W 112	Upper case found in data; Found at position(2440) SEQID(656)
W 112	Upper case found in data; Found at position(2452) SEQID(656)
W 112	Upper case found in data; Found at position(2496) SEQID(656)
W 112	Upper case found in data; Found at position(2500) SEQID(656)
W 112	Upper case found in data; Found at position(2504) SEQID(656)
W 112	Upper case found in data; Found at position(2531) SEQID(656)
W 112	Upper case found in data; Found at position(2552) SEQID(656)
W 112	Upper case found in data; Found at position(2941) SEQID(656)
W 112	Upper case found in data; Found at position(2945) SEQID(656)
W 112	Upper case found in data; Found at position(2966) SEQID(656)
W 112	Upper case found in data; Found at position(2991) SEQID(656)
W 112	Upper case found in data; Found at position(3015) SEQID(656)

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Error code	Error Description
W 112	Upper case found in data; Found at position(3043) SEQID(656)
W 112	Upper case found in data; Found at position(3047) SEQID(656) This error has occurred more than 20 times, will not be displayed
E 342	'n' position not defined found at POS: 4496 SEQID(656)
E 342	'n' position not defined found at POS: 9429 SEQID(656)
E 342	'n' position not defined found at POS: 12391 SEQID(656)
E 342	'n' position not defined found at POS: 12931 SEQID(656)
E 342	'n' position not defined found at POS: 19721 SEQID(656)
E 342	'n' position not defined found at POS: 30772 SEQID(656)
E 342	'n' position not defined found at POS: 30776 SEQID(656)
E 342	'n' position not defined found at POS: 30779 SEQID(656)
E 342	'n' position not defined found at POS: 30783 SEQID(656)
E 342	'n' position not defined found at POS: 30787 SEQID(656)
E 342	'n' position not defined found at POS: 30791 SEQID(656)
E 342	'n' position not defined found at POS: 30795 SEQID(656)
E 342	'n' position not defined found at POS: 30799 SEQID(656)
E 342	'n' position not defined found at POS: 30803 SEQID(656)
E 342	'n' position not defined found at POS: 30807 SEQID(656)
E 342	'n' position not defined found at POS: 30811 SEQID(656)
E 342	'n' position not defined found at POS: 30815 SEQID(656)
E 342	'n' position not defined found at POS: 30819 SEQID(656)
E 342	'n' position not defined found at POS: 30823 SEQID(656)
E 342	'n' position not defined found at POS: 30827 SEQID(656)

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Error code	Error Description
E 259	Found undefined lettercode; POS (90993) SEQID(656)
E 259	Found undefined lettercode; POS (90994) SEQID(656)
E 259	Found undefined lettercode; POS (90995) SEQID(656)
E 259	Found undefined lettercode; POS (90996) SEQID(656)
E 259	Found undefined lettercode; POS (90997) SEQID(656)
E 259	Found undefined lettercode; POS (90998) SEQID(656)
E 259	Found undefined lettercode; POS (90999) SEQID(656)
E 259	Found undefined lettercode; POS (91000) SEQID(656)
E 259	Found undefined lettercode; POS (91001) SEQID(656)
E 259	Found undefined lettercode; POS (91002) SEQID(656)
E 259	Found undefined lettercode; POS (91003) SEQID(656)
E 259	Found undefined lettercode; POS (91004) SEQID(656)
E 259	Found undefined lettercode; POS (91005) SEQID(656)
E 259	Found undefined lettercode; POS (91006) SEQID(656)
E 259	Found undefined lettercode; POS (91008) SEQID(656)
E 259	Found undefined lettercode; POS (91009) SEQID(656)
E 259	Found undefined lettercode; POS (91010) SEQID(656)
E 259	Found undefined lettercode; POS (91011) SEQID(656)
E 259	Found undefined lettercode; POS (91012) SEQID(656)
E 259	Found undefined lettercode; POS (91013) SEQID(656) This error has occurred more than 20 times, will not be displayed

<210> 1  
<211> 1680  
<212> DNA  
<213> Cellulomonas strain 69B4

<400> 1

gcgcgtcg	ccacgacga	cgccgtccgc	cgttcgccgg	cgtacctg	cg	ttggctcacc	60
acccaccaga	tcgacctcca	taacgaggcc	gtatgaccag	aaaggatct	gccaccgccc	120	
accagacacgc	tcctaacc	tc	cgagcacccgg	cgaccggccgg	gtgcgatgaa	agggacgaac	180
cgagatgaca	ccacgcacag	tcac	cgccgggc	cctggccgtg	gccacccg	cgccacact	240
cctggcaggc	ggcatggccg	cccaggccaa	cgagccgca	ccacccggga	gcgcgagcgc	300	
accgcccacgc	ctggccgaga	agctcgacc	cgac	ccttc	gaggccatgg	agcgcgac	360
gggcctcgac	gcggaggaag	ccgcccac	cctggcg	tc	cagcacgacg	cagccgagac	420
ccggcaggcc	ctcgccgaa	agctcgac	ga	gacttcg	ggcacctggg	tcgaggacga	480
cgtcctgtac	gtcgccacca	ccgacgagga	cgccgtcg	ag	gagg	tcgaggacga	540
cacggccgtc	accgtcgac	actcc	ctggc	cgac	gc	ccgtcctcg	600
cgccgcctc	gaggccacg	acgacgt	cc	ac	gt	cgacgtcc	660
cgtcg	ccgtcaagg	ccggagcc	ggac	gtcg	gc	ccgtcg	720
cgacgtccc	tcgcacg	tgac	tc	cgac	ga	gacccgc	780
cgacgtgatc	ggcggcaac	cctacaccat	cg	ggggggc	agccgt	cgatcg	840
cgccgtcaac	ggcgggttca	tcac	ccgg	ccact	gc	ccac	900
caaccccacc	gggac	ttcg	ccgg	ttcg	ctt	ccgg	960
tac	ccgg	ggcgt	ttcg	ttcg	cc	ccgt	1020
gg	ccgg	ttcg	ttcg	ttcg	cc	ccgt	1080
cg	gggtgg	ccac	ccgg	ccgg	cc	ccgt	1140
cg	ccgg	ccac	ccac	ccac	cc	ccgt	1200
gt	ccgg	ccac	ccac	ccac	cc	ccgt	1260
cc	ccgg	ccac	ccac	ccac	cc	ccgt	1320
cc	ccgg	ccac	ccac	ccac	cc	ccgt	1380
cc	ccgg	ccac	ccac	ccac	cc	ccgt	1440
cc	ccgg	ccac	ccac	ccac	cc	ccgt	1500
cc	ccgg	ccac	ccac	ccac	cc	ccgt	1560
cc	ccgg	ccac	ccac	ccac	cc	ccgt	1620
cc	ccgg	ccac	ccac	ccac	cc	ccgt	1680

<210> 2  
<211> 1488  
<212> DNA  
<213> Cellulomonas strain 69B4

<400> 2

atgacaccac	gcacagt	tcac	ggggccct	gcgtggca	ccgc	acgc	cacactcct	60
gcaggcggca	tggcc	ccca	ggcc	acgag	ccgc	ccac	ccgc	120
ccacgcctgg	ccgaga	agact	cgac	ccccc	gc	ct	cc	180
ctcgacgcgg	agg	aa	ggc	ccac	cc	cc	cc	240
gaggccctcg	ccga	agag	ct	gac	gg	ac	gc	300
ctgtacgtcg	ccac	acc	ccg	gac	gt	cg	agg	360
gccgtcacc	cc	gg	cc	ac	ct	cg	gg	420
gccctcgagg	cc	ac	cc	ac	cc	tg	ac	480
gtcg	cc	ac	cc	ac	cc	cc	cc	540
gtcccgtcc	cc	ac	cc	ac	cc	cc	cc	600
gtgatcg	cc	ac	cc	ac	cc	cc	cc	660
gtcaac	cc	ac	cc	ac	cc	cc	cc	720
cccac	cc	ac	cc	ac	cc	cc	cc	780
ggggccgg	cc	ac	cc	ac	cc	cc	cc	840
ggcggcaca	cc	ac	cc	ac	cc	cc	cc	900
tggact	cc	ac	cc	ac	cc	cc	cc	960

```

cgccggcctga tccgcaccc acgtctgcgcc gagcccccggcg actccgggtgg ctgcgtgtc 1020
gccggcaacc aggcccagggg cgttcacgttcc ggccggctcgg gcaactgccc caccgggtggc 1080
accacgttct tccagccggt caacccccatc ctccaggcgt acggcctgag gatgtatcacc 1140
acggactcgg gcagcagcccc ggccccctgca ccgacacctct gcacccggcta cgcccgacc 1200
ttcacccggga ccctcggcggc cggccggggcc gcccggccagc ccaacccgggtc ctacgtgcag 1260
gtcaacccggt ccggggaccca cagcgtgtgc ctcaacccggc cctccgggtgc ggacttgcac 1320
ctctacgtgc agcgctggaa cggcagctcc tgggtgaccc tggcccccagag cacctcccc 1380
ggctccaacg agaccatcac ctacccggc aacccggct actaccgcta cgtggtcaac 1440
ggccgcgtccg gtcgggtgc ctacaccatg gggctcaccc tccccctga 1488

```

<210> 3  
<211> 1404  
<212> DNA  
<213> Cell

<400>	3	60																																																																																																																																											
aacgagcccg	caccacccgg	gagcgcgagc	gcaccgcccc	gcctggccga	gaagctcgac	cccgcac	tcgaggccat	ggagcgcgac	ctgggcctcg	acgccccgg	agccgcccgc	accctggcg	tccagcacga	cgccagcccg	accggcgagg	ccctgcgg	gaagctcgac	gaggacttcg	ccggcacctcg	ggtcgaggac	gacgtccctgt	acgtcgccac	caccgacgag	gacgcgcgtcg	aggaggtcg	gggcgaaggc	gccacggccg	tcaccgtcg	gcaactccctg	gcccac	aggcctggaa	gaccgtcctc	gacgcccccc	tcgagggcca	cgacgacgtg	cccacctgg	acgtcgacgt	cccgaccaac	acggtcgctcg	tcggcgtaa	ggccggagcc	caggacgtcg	ccgcccgcct	cgtcgaaagg	gcccacgtcc	cgtccgacgc	cgtgaccttc	gtcgagacccg	acgagacccc	gcccggaccatg	ttcgacgtga	tcggcgca	cgctacacc	atcggggggc	gcagccgctg	ctcgatcg	ttcgcggtca	acggcggtt	catcaccgc	ggccactcg	gccgcacccgg	cgccaccacc	gccaacccca	ccgggaccc	cgccgggtcc	agcttcccccgg	gcaacgacta	cgcgttcgtc	cgtaccgggg	ccggcgtaa	cctgtcgcc	caggtaaca	actactccgg	ttggcccg	cagggtcgcc	ggcacaccgc	ggccccccgtc	ggctcgcccg	tgtggcggtc	cgggtcgacc	accgggtggc	actcgccgc	catcaactcg	ctcaactct	cggtacacca	ccccgaggcc	acgtcccg	gcctgatccg	caccaccgtc	tgccgcgagc	ccggcgactc	cgtggcgctcg	ctgtcgcc	gcaaccaggc	ccaggccgtc	acgtcccg	gtccggcaa	ctggccgcacc	ggtggcacca	cgttttcca	gccggtaac	cccatcc	aggcgatcg	cctgaggatg	atcaccacgg	actcgccgc	cagccggcc	cctgcacca	cctctgcac	cggctacg	cgcaccc	ccgggaccc	cgccggccggc	cgggccggc	cccaagccaa	cgggtctac	gtcgagg	accgggtccgg	gaccacacgc	gtgtgcctca	acgggcctc	cggtgccgac	ttcgacctc	acgtgcacgc	ctggAACGGC	agcttccctgg	tgaccgtcg	ccagagcacc	tcccccgg	ccaaacgagac	catcacctac	cgccgcac	ccggctacta	ccgctacgt	gtcaacggc	cgtccggctc	cggtgcc	accatggggc	tcaccctccc	ctg	1404

<210> 4  
<211> 567  
<212> DNA  
<213> *Cellulomonas* spp.

<400> 4  
ttcgacgtga tcggccgcaaa cgcc tacacc atcgggggc gcagccgctg ctgc at cggg 60  
ttcgccgtca acggccggtt catcaccgc gcgcactgctg gcccacccgg cggcaccacc 120  
gcacccca ccgggacccctt cggccgggtcc agcttcccg gcaacgacta cgcgttcgtc 180  
cgta cccgggg ccggcgtgaa cttgtctggcc caggtaaca actactccgg tggccgcgtc 240  
cagg tccggc ggcacacccgc ggcccccg tc ggctccggc tg tgcgggtc cgggtcgacc 300  
accgggtggc actggggcac catcactgctg ctcaactctt cggtaaccta ccccgagggc 360  
accgtcccgcc gcctgatccg caccaccgtc tgcggcggc cccggcactc cggtggtcg 420  
ctgtccgtccg gcaaccaggc ccaggccgtc acgtccggcg gctccggcaa ctggccgacc 480  
ggtggcacca cgttccca gccggtaac cccatcttcc aggcgtacgg cctgaggatg 540  
atcaccacgg actcgccgca gagecccg 567

<210> 5  
<211> 83  
<212> DNA  
<213> Cellulomonas strain 69B4

<400> 5  
atgacaccac cacagtcacg cggccctgg ccgtggccac cgcaagccgc acactcctgg 60  
caggcgccat ggccgcccag gcc 83

<210> 6  
<211> 495  
<212> PRT  
<213> Cellulomonas strain 69B4

<400> 6

Met Thr Pro Arg Thr Val Thr Arg Ala Leu Ala Val Ala Thr Ala Ala  
1 5 10 15  
Ala Thr Leu Leu Ala Gly Gly Met Ala Ala Gln Ala Asn Glu Pro Ala  
20 25 30  
Pro Pro Gly Ser Ala Ser Ala Pro Pro Arg Leu Ala Glu Lys Leu Asp  
35 40 45  
Pro Asp Leu Leu Glu Ala Met Glu Arg Asp Leu Gly Leu Asp Ala Glu  
50 55 60  
Glu Ala Ala Ala Thr Leu Ala Phe Gln His Asp Ala Ala Glu Thr Gly  
65 70 75 80  
Glu Ala Leu Ala Glu Glu Leu Asp Glu Asp Phe Ala Gly Thr Trp Val  
85 90 95  
Glu Asp Asp Val Leu Tyr Val Ala Thr Thr Asp Glu Asp Ala Val Glu  
100 105 110  
Glu Val Glu Gly Glu Gly Ala Thr Ala Val Thr Val Glu His Ser Leu  
115 120 125  
Ala Asp Leu Glu Ala Trp Lys Thr Val Leu Asp Ala Ala Leu Glu Gly  
130 135 140  
His Asp Asp Val Pro Thr Trp Tyr Val Asp Val Pro Thr Asn Ser Val  
145 150 155 160  
Val Val Ala Val Lys Ala Gly Ala Gln Asp Val Ala Ala Gly Leu Val  
165 170 175  
Glu Gly Ala Asp Val Pro Ser Asp Ala Val Thr Phe Val Glu Thr Asp  
180 185 190  
Glu Thr Pro Arg Thr Met Phe Asp Val Ile Gly Gly Asn Ala Tyr Thr  
195 200 205  
Ile Gly Gly Arg Ser Arg Cys Ser Ile Gly Phe Ala Val Asn Gly Gly  
210 215 220  
Phe Ile Thr Ala Gly His Cys Gly Arg Thr Gly Ala Thr Thr Ala Asn  
225 230 235 240  
Pro Thr Gly Thr Phe Ala Gly Ser Ser Phe Pro Gly Asn Asp Tyr Ala  
245 250 255  
Phe Val Arg Thr Gly Ala Gly Val Asn Leu Leu Ala Gln Val Asn Asn  
260 265 270  
Tyr Ser Gly Gly Arg Val Gln Val Ala Gly His Thr Ala Ala Pro Val  
275 280 285  
Gly Ser Ala Val Cys Arg Ser Gly Ser Thr Thr Gly Trp His Cys Gly

290	295	300
Thr Ile Thr Ala Leu Asn Ser Ser Val Thr Tyr Pro Glu Gly Thr Val		
305	310	315
Arg Gly Leu Ile Arg Thr Thr Val Cys Ala Glu Pro Gly Asp Ser Gly		
325	330	335
Gly Ser Leu Leu Ala Gly Asn Gln Ala Gln Gly Val Thr Ser Gly Gly		
340	345	350
Ser Gly Asn Cys Arg Thr Gly Gly Thr Thr Phe Phe Gln Pro Val Asn		
355	360	365
Pro Ile Leu Gln Ala Tyr Gly Leu Arg Met Ile Thr Thr Asp Ser Gly		
370	375	380
Ser Ser Pro Ala Pro Ala Pro Thr Ser Cys Thr Gly Tyr Ala Arg Thr		
385	390	395
Phe Thr Gly Thr Leu Ala Ala Gly Arg Ala Ala Ala Gln Pro Asn Gly		
405	410	415
Ser Tyr Val Gln Val Asn Arg Ser Gly Thr His Ser Val Cys Leu Asn		
420	425	430
Gly Pro Ser Gly Ala Asp Phe Asp Leu Tyr Val Gln Arg Trp Asn Gly		
435	440	445
Ser Ser Trp Val Thr Val Ala Gln Ser Thr Ser Pro Gly Ser Asn Glu		
450	455	460
Thr Ile Thr Tyr Arg Gly Asn Ala Gly Tyr Tyr Arg Tyr Val Val Asn		
465	470	475
Ala Ala Ser Gly Ser Gly Ala Tyr Thr Met Gly Leu Thr Leu Pro		
485	490	495

<210> 7  
 <211> 467  
 <212> PRT  
 <213> Cellulomonas strain 69B4

<400> 7

Asn Glu Pro Ala Pro Pro Gly Ser Ala Ser Ala Pro Pro Arg Leu Ala		
1	5	10
Glu Lys Leu Asp Pro Asp Leu Leu Glu Ala Met Glu Arg Asp Leu Gly		
20	25	30
Leu Asp Ala Glu Glu Ala Ala Ala Thr Leu Ala Phe Gln His Asp Ala		
35	40	45
Ala Glu Thr Gly Glu Ala Leu Ala Glu Glu Leu Asp Glu Asp Phe Ala		
50	55	60
Gly Thr Trp Val Glu Asp Asp Val Leu Tyr Val Ala Thr Thr Asp Glu		
65	70	75
Asp Ala Val Glu Val Glu Gly Ala Thr Ala Val Thr Val		
85	90	95
Glu His Ser Leu Ala Asp Leu Glu Ala Trp Lys Thr Val Leu Asp Ala		
100	105	110
Ala Leu Glu Gly His Asp Asp Val Pro Thr Trp Tyr Val Asp Val Pro		
115	120	125
Thr Asn Ser Val Val Val Ala Val Lys Ala Gly Ala Gln Asp Val Ala		
130	135	140
Ala Gly Leu Val Glu Gly Ala Asp Val Pro Ser Asp Ala Val Thr Phe		
145	150	155
Val Glu Thr Asp Glu Thr Pro Arg Thr Met Phe Asp Val Ile Gly Gly		
165	170	175
Asn Ala Tyr Thr Ile Gly Gly Arg Ser Arg Cys Ser Ile Gly Phe Ala		
180	185	190

Val Asn Gly Gly Phe Ile Thr Ala Gly His Cys Gly Arg Thr Gly Ala  
 195 200 205

Thr Thr Ala Asn Pro Thr Gly Thr Phe Ala Gly Ser Ser Phe Pro Gly  
 210 215 220

Asn Asp Tyr Ala Phe Val Arg Thr Gly Ala Gly Val Asn Leu Leu Ala  
 225 230 235 240

Gln Val Asn Asn Tyr Ser Gly Gly Arg Val Gln Val Ala Gly His Thr  
 245 250 255

Ala Ala Pro Val Gly Ser Ala Val Cys Arg Ser Gly Ser Thr Thr Gly  
 260 265 270

Trp His Cys Gly Thr Ile Thr Ala Leu Asn Ser Ser Val Thr Tyr Pro  
 275 280 285

Glu Gly Thr Val Arg Gly Leu Ile Arg Thr Thr Val Cys Ala Glu Pro  
 290 295 300

Gly Asp Ser Gly Gly Ser Leu Leu Ala Gly Asn Gln Ala Gln Gly Val  
 305 310 315 320

Thr Ser Gly Gly Ser Gly Asn Cys Arg Thr Gly Gly Thr Thr Phe Phe  
 325 330 335

Gln Pro Val Asn Pro Ile Leu Gln Ala Tyr Gly Leu Arg Met Ile Thr  
 340 345 350

Thr Asp Ser Gly Ser Ser Pro Ala Pro Ala Pro Thr Ser Cys Thr Gly  
 355 360 365

Tyr Ala Arg Thr Phe Thr Gly Thr Leu Ala Ala Gly Arg Ala Ala Ala  
 370 375 380

Gln Pro Asn Gly Ser Tyr Val Gln Val Asn Arg Ser Gly Thr His Ser  
 385 390 395 400

Val Cys Leu Asn Gly Pro Ser Gly Ala Asp Phe Asp Leu Tyr Val Gln  
 405 410 415

Arg Trp Asn Gly Ser Ser Trp Val Thr Val Ala Gln Ser Thr Ser Pro  
 420 425 430

Gly Ser Asn Glu Thr Ile Thr Tyr Arg Gly Asn Ala Gly Tyr Tyr Arg  
 435 440 445

Tyr Val Val Asn Ala Ala Ser Gly Ser Gly Ala Tyr Thr Met Gly Leu  
 450 455 460

Thr Leu Pro  
 465

<210> 8  
 <211> 189  
 <212> PRT  
 <213> Cellulomonas spp.

<400> 8

Phe Asp Val Ile Gly Gly Asn Ala Tyr Thr Ile Gly Gly Arg Ser Arg  
 1 5 10 15

Cys Ser Ile Gly Phe Ala Val Asn Gly Gly Phe Ile Thr Ala Gly His  
 20 25 30

Cys Gly Arg Thr Gly Ala Thr Thr Ala Asn Pro Thr Gly Thr Phe Ala  
 35 40 45

Gly Ser Ser Phe Pro Gly Asn Asp Tyr Ala Phe Val Arg Thr Gly Ala  
 50 55 60

Gly Val Asn Leu Leu Ala Gln Val Asn Asn Tyr Ser Gly Gly Arg Val  
 65 70 75 80

Gln Val Ala Gly His Thr Ala Ala Pro Val Gly Ser Ala Val Cys Arg  
 85 90 95

Ser Gly Ser Thr Thr Gly Trp His Cys Gly Thr Ile Thr Ala Leu Asn

	100	105	110
Ser Ser Val Thr Tyr Pro Glu Gly Thr Val Arg Gly Leu Ile Arg Thr			
115	120	125	
Thr Val Cys Ala Glu Pro Gly Asp Ser Gly Gly Ser Leu Leu Ala Gly			
130	135	140	
Asn Gln Ala Gln Gly Val Thr Ser Gly Gly Ser Gly Asn Cys Arg Thr			
145	150	155	160
Gly Gly Thr Thr Phe Phe Gln Pro Val Asn Pro Ile Leu Gln Ala Tyr			
165	170	175	
Gly Leu Arg Met Ile Thr Thr Asp Ser Gly Ser Ser Pro			
180	185		

<210> 9

<211> 28

<212> PRT

<213> Cellulomonas strain 69B4

<400> 9

Met Thr Pro Arg Thr Val Thr Arg Ala Leu Ala Val Ala Thr Ala Ala  
1 5 10 15  
Ala Thr Leu Leu Ala Gly Gly Met Ala Ala Gln Ala  
20 25

<210> 10

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> primer

<220>

<221> misc\_feature

<222> (3)..(3)

<223> n is a, c, g, or t

<400> 10

acnacsggst ggcrtgtgcgg cac

23

<210> 11

<211> 19

<212> DNA

<213> Artificial Sequence

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<220>

<221> misc\_feature

<222> (2)..(17)

<223> n is a, c, g, or t

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angngccgccc ggagtcncc

19

<210> 12  
<211> 58  
<212> PRT  
<213> Cellulomonas strain 69B4

<400> 12

Asp Gly Trp Asp Cys Gly Thr Ile Thr Ala Leu Asn Ser Ser Val Thr  
1 5 10 15  
Tyr